



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,641	09/23/2005	Prasun K. Chakravarty	21230YP	1919
210 7590 08/03/2009 MERCK AND CO., INC P O BOX 2000 RAHWAY, NJ 07065-0907				
EXAMINER LEESER, ERICH A				
ART UNIT		PAPER NUMBER		
1624				
MAIL DATE		DELIVERY MODE		
08/03/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/550,641

Applicant(s)

CHAKRAVARTY ET AL.

Examiner

Erich A. Leeser

Art Unit

1624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 7-9, 11-20, 22, 24-31, 33-40 and 43-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33, 38 and 43 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 14, 19, 29 and 44 is/are rejected.
- 7) ☒ Claim(s) 7-9, 11-13, 15-18, 20, 22, 24-28, 30, 31, 34-37, 39, 40 and 45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3-26-09
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to Applicant's submission dated June 3, 2009, in which Applicant amended claim 1. Examiner previously indicated that claims 33, 38, and 43 are allowable. Claims 1-2, 7-9, 11-20, 22, 24-31, 33-40, and 43-45 are pending and under examination.

Information Disclosure Statement

The references contained in the IDS dated March 26, 2009, are made of record.

Claim Rejections - 35 USC § 102

Examiner previously rejected claims 1, 14, 19, 29, and 44 under 35 USC 102(b) as being anticipated by Katoh, et al., U.S. Patent No. 4,783,466. Applicant's claim amendments do not avoid this reference and it still reads on the rejected claims. As such, Examiner maintains this rejection for reasons of record.

Examiner previously rejected claims 1, 12, 19, 24, and 44 under 35 USC 102(b) as being anticipated by Katoh, et al., U.S. Patent No. 4,873,248. Applicant's claim amendments avoid this reference and it no longer reads on the rejected claims. As such, Examiner withdraws this rejection.

New Grounds of Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 USC 102(b) as being anticipated by Griot, U.S. Patent No. 3,928,449. Griot teaches aminoalkoxy-terphenyl compounds, which include instant compounds.

Specifically, the compound Example 17 found in column 34 of the reference anticipates the aforementioned claims where it is a compound of Formula (I) wherein Het-1 is the third choice of claim 1, R¹⁻³ are hydrogen, one of R⁴⁻⁵ is hydrogen and the other is unsubstituted phenyl, one of R⁶⁻⁸ is ethoxy substituted with diethylamino and the other two are hydrogen.

Therefore, the instant claims 1-2 are anticipated by Griot, U.S. Patent No. 3,928,449.

Claims 1-2 are rejected under 35 USC 102(b) as being anticipated by Shao, et al., WO 03/022276. Shao, et al. teaches aryl substituted pyridinecarboxamide compounds, which include instant compounds.

Specifically, the generic teaching of Formula I of the reference anticipates the aforementioned claims where it is a compound of Formula (I) wherein Het-1 is any of the first four choices of instant claim 1 and Ar₂ of the reference, and both instant R⁷⁻⁸ of the reference are hydrogen, alkyl, alkenyl, alkynyl, alkoxy, carboxy, cyano, amino, nitro, halogen, hydroxy; instant R⁴⁻⁵ and R⁵⁻⁶ of the reference is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, carboxy, alkylthiol, cyano, amino, nitro, halogen, hydroxy; and instant R¹⁻³ and R¹⁻⁴ of the reference is alkyl, amino, alkylthio, carbonyl, sulfonyl, OC(O)NH₂, 2-

Art Unit: 1624

imidazolyl, 2-imidazolyl, 3-pyrazolyl, 5-isoxazolyl, 3-(1,2,4)-triazolyl, hydrogen, alkenyl, alkynyl, hydroxy, halogen, cycloalkyl, cyano, amino, alkylamino, dialkylamino, alkoxy, aminocarbonyl, alkylaminocarbonyl, aralkylaminocarbonyl, arylcarbonylamino, and aralkylcarbonylamino.

Therefore, the instant claims 1-2 are anticipated by Shao, et al., WO 03/022276.

Claim Rejections - 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103 that form the basis for the rejections under this section made in this Office action:

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salman, *Synthesis and Reaction of Cyanopyridone Derivatives and Their Potential Biological Activities*, Pharmazie, 54, 178-183 (1999).

3. **Determining the scope and contents of the prior art.**

Salman teaches antibacterial/antifungal compounds, which include instant compounds.



Specifically, the compound: wherein Y is N(CH₃)₂ or OCH₃.

of the reference anticipates the aforementioned claims where it is a compound of Formula (I) wherein Het-1 is the first choice of claim 1, R⁴⁻⁸ are hydrogen, one of R²⁻³ is cyano and the other is carboxylic acid and R¹ is either methoxy or NHMe.

Ascertaining the difference between the prior art and the claims at issue.

It is well-established that position isomers are prima facie structurally obvious even in the absence of a teaching to modify. The isomer is expected to be made by the same method and to have generally the same properties. This expectation is then deemed the motivation for preparing the position isomers. This situation has arisen many times in the courts. *Ex parte Englehardt*, 208 USPQ 343, 349; *In re Mehta*, 146 USPQ 284, 287; *In re Surrey*, 138 USPQ 67; *Ex Parte Ulliot*, 103 USPQ 185; *In re Norris*, 84 USPQ 459; *Ex Parte Naito*, 168 USPQ 437, 439; *Ex parte Allais*, 152 USPQ 66; *In re Wilder*, 166 USPQ 545, 548; *Ex parte Henkel*, 130 USPQ 474; *Ex parte Biel*, 124 USPQ 109; *In re Petrzilka*, 165 USPQ 327; *In re Crownse*, 150 USPQ 554; *In re Fouche*, 169 USPQ 431; *Ex parte Ruddy*, 121 USPQ 427; *In re Wiechert*, 152 USPQ 247, *In re Shetty*, 195 USPQ 753; *In re Jones*, 74 USPQ 152, 154; and *In re Mayne*, 41 USPQ2d 1451, 1454-1455 (the court took notice of the extreme similarity between the amino acids Leucine and isoleucine: "In fact, Leu is an isomer of Ile -- an identical chemical formula with differences only in the chemical bonding of the atoms. The side chains...of Leu and Ile have the same number of hydrogen and carbon atoms...The structure of Leu and Ile alone suggest their functional equivalency").

For example, "Position isomerism has been used as a tool to obtain new and useful drugs", *Ex parte Englehardt*, 208 USPQ 343, 349, and: "Position isomerism is a fact of close structural similarity". *In re Mehta*, 146 USPQ 284, 287. "Particular types or categories of

structural similarity without more, have, in past cases, given rise to *prima facie* obviousness”; one of those listed is “adjacent homologues and structural isomers”. *In re Jones*, 21 USPQ2d 1942, 1943. Position isomers are the basic form of close “structural isomers.” “[A] novel useful chemical compound which is homologous or isomeric with compounds of the prior art is unpatentable unless it possesses some unobvious or unexpected beneficial property not possessed by the prior art compounds.” *In re Schechter and LaForge*, 98 USPQ 144, 150. “Structural relationships may provide the requisite motivation or suggestion to modify known compounds to obtain new compounds ... a known compound may suggest its analogs or isomers, either geometric isomers (cis v. trans) or position isomers (c.g., ortho v. para).” *In re Deuel* 34 USPQ2d 1210, 1214. See also MPEP 2144.09, second paragraph.

Here, the only difference between the cited compound and the instant compounds is the two outside rings of the instant compounds are bonded meta in relation to one another on the center phenyl ring, whereas they are bonded para in relation to one another on the center phenyl ring in the cited compound.

Resolving the level of skill in the art.

It would have required little more than routine modification of the synthesis of the cited compound by one having ordinary skill in this art at the time the invention was made to prepare a compound within the scope of the compounds instantly claimed as applicants have done with the above-cited reference before them. The variants show the interchangeability of the overlapping substituents.

Claim Objections

Claims 7-9, 11-13, 15-18, 20, 22, 24-28, 30-31, 34-37, 39-40, and 45 are still objected to as being dependent upon rejected independent claim 1, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Erich A. Leeser whose telephone number is 571-272-9932. The Examiner can normally be reached Monday through Friday from 8:30 to 6:00 EST.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. James O. Wilson can be reached at 571-272-0661. The fax number for the organization where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197. If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Erich A. Leeser/
Patent Examiner, Art Unit 1624
United States Patent and Trademark Office
400 Dulany Street, Remsen 5C11
Alexandria, VA 22314-5774
Tel. No.: (571) 272-9932

/James O. Wilson/
Supervisory Patent Examiner, Art Unit 1624
United States Patent and Trademark Office
400 Dulany Street, Remsen 5A11
Alexandria, VA 22314-5774
Tel. No.: (571) 272-0661